

CLAIMS:

1. A method of scheduling a plurality of tasks (τ_i) in a data processing system (100), each task having suspension data (303) specifying suspension of the task based on memory usage associated therewith, the method including:
 - processing one of the plurality of tasks;
 - 5 monitoring for an input indicative of memory usage of the task matching the suspension data associated with the task;
 - suspending processing of said task on the basis of said monitored input; and
 - processing a different one of the plurality of tasks.
- 10 2. A method according to claim 1, including:
 - receiving (501) first data (303d) identifying maximum memory usage associated with the plurality of tasks;
 - receiving second data identifying memory available for processing the plurality of tasks; and
 - 15 identifying (504), on the basis of the first and second data, whether there is sufficient memory available to process the tasks;
 - in which said monitoring and suspending steps are applied (509) only in response to identifying insufficient memory.
- 20 3. A method according to claim 1, in which said input comprises data indicative of a suspension request.
4. A method according to claim 1, in which said input comprises data indicative of memory usage of the task and the method comprises identifying when the memory usage
25 matches the suspension data associated with said task.
5. A method according to claim 1, including monitoring (601) termination of tasks and repeating (603) said step of identifying availability of memory in response to a task terminating.

6. A method according to claim 5, in which, in response to identifying sufficient memory to execute the remaining tasks, the monitoring step is deemed unnecessary (605).

- 5 7. A scheduler (401) for use in a data processing system (100), the data processing system being arranged to execute a plurality of tasks (τ_i) and having access to a specified amount of memory for use in executing the tasks, the scheduler comprising:
- a data receiver (203) arranged to receive data identifying maximum memory usage associated with a task;
- 10 an evaluator (403) arranged to identify, on the basis of the received data, whether there is sufficient memory to execute the tasks;
- a selector (τ_i , 401, 403) arranged to select at least one task for suspension during execution of the task, said suspension coinciding with a specified memory usage by the task;
- 15 wherein, in response to the evaluator identifying that there is insufficient memory to execute the plurality of tasks, the selector selects one or more tasks for suspension, on the basis of their specified memory usage and the specified amount of memory available to the data processing system, and the scheduler suspends execution of the or each selected task in response to the task using the specified memory.
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8. A scheduler according to claim 7, wherein the evaluator (403) is arranged to monitor termination of tasks, and in response to a task terminating, to identify whether there is sufficient memory to execute the remaining tasks.
- 25 9. A scheduler according to claim 7, wherein the data identifies an execution deadline associated with the task.
10. A scheduler according to claim 9, wherein, in response to the evaluator (403) identifying sufficient memory to execute the remaining tasks, the scheduler (401) is arranged
- 30 to identify a task without an execution deadline and schedule the identified task.
11. A scheduler according to any one of claim 8 to claim 10, wherein, in response to the evaluator (403) identifying sufficient memory to execute the remaining tasks, the selector (τ_i , 401, 403) is arranged to deselect said selected one or more tasks.

12. A data processing system arranged to execute a plurality of tasks, the data processing system including:

- memory (205) arranged to hold instructions and data during execution of a
5 task (τ_i);
receiving means (203) arranged to receive data identifying maximum memory usage associated with a task;
evaluating means (403) arranged to identify, on the basis of the received data, whether there is sufficient memory to execute the tasks; and
10 a scheduler (401) arranged to schedule execution of the tasks on the basis of input received from the evaluating means,
wherein, in response to identification of insufficient memory to execute the plurality of tasks, the scheduler is arranged to suspend execution of at least one task in dependence on memory usage by the task.

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13. A data processing system according to claim 12, wherein the data processing system comprises a digital television system.

14. A method of transmitting data to a data processing system, the method
20 comprising:

- transmitting data for use by the data processing system in processing a task (τ_i); and
transmitting suspension data (303) specifying suspension of the task based on memory usage during processing thereof,
25 wherein the data processing system is arranged to perform a process comprising:
monitoring for an input indicative of memory usage of the task matching the suspension data associated with the task; and
suspending processing of said task on the basis of said monitored
30 input.

15. A method according to claim 14, wherein the suspension data identifies at least one point (303b) at which processing of the task can be suspended, based on memory usage of the task.

16. A method according to claim 14, wherein the suspension data includes data (303d) identifying maximum memory usage associated with the task.
- 5 17. A method according to claim 15, wherein the task comprises a plurality of sub-jobs ($\tau_{i,j}$) and said data (303b) identifying at least one point at which processing of the task can be suspended corresponds to each such sub-job.
18. A method of configuring a task (τ_i) for use in a data processing system, the
10 method including associating suspension data (303) with the task, the suspension data specifying suspension of the task based on memory usage associated therewith, wherein the data processing system is arranged to perform a process in respect of a plurality of tasks, the process comprising:
monitoring for an input indicative of memory usage of the task matching the
15 suspension data associated with the task; and
suspending processing of said task on the basis of said monitored input.
19. A method according to claim 18, including identifying a data processing
system configured to process the task and transmitting said suspension data to the data
20 processing system.
20. A computer program comprising a set of instructions arranged to cause a processing system to perform the method according to any one of claim 1 to claim 6.